

Application No.: 10/629,247  
Dated: December 13, 2004  
Amendment

### REMARKS/ARGUMENTS

Claims 1, 3, 4, 5, 9, 22, 23 and 28 have been amended, support for which may be found within applicants' specification.

The Examiner has rejected claims 1-8, 11-13, 22-27 and 30 under 35 U.S.C. 102(b) as being anticipated by Tsumura et al., U.S. Patent No. 5,304,308. The Examiner next rejects claims 9 and 28 under 35 U.S.C. 103(a) as being unpatentable over Tsumura et al., U.S. Patent No. 5,304,308. The Examiner next rejects claims 10 and 29 under 35 U.S.C. 103(a) as being unpatentable over Tsumura et al., U.S. Patent No. 5,304,308, in view of Hiatt et al., U.S. Patent No. 6,426,004. The Examiner next rejects claims 14-21, 28-29 and 31-40 under 35 U.S.C. 103(a) as being unpatentable over Tsumura et al. The rejection of applicants' claims, as amended, is respectfully traversed. Reconsideration and favorable action is respectfully solicited in view of the following comments.

The Examiner has rejected claims 1-8, 11-13, 22-27 and 30 under 35 U.S.C. 102(b) as being anticipated by Tsumura et al., U.S. Patent No. 5,304,308. The Examiner has taken the position that Tsumura et al. discloses each of the claimed elements in the applicable claims. Applicants have amended independent claims 1 and 22 to further and more accurately define applicants' invention as being directed to a process and methodology for use in treating a wastewater stream originating from a chemical or refinery process. This is in direct contrast to the Tsumura patent which teaches treatment of wastewater associated with sewage.

As may be seen from a review of Tsumura et al., proposed is an intermittent aeration activated sludge process in which aeration and agitation are alternately

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repeated. Proposed for use in Tsumura et al. are first and second aeration tanks that are connected to each other and an ORP meter applied to each tank. In the first aeration tank, the sum of an aeration period and a denitrification period is controlled to a predetermined period based on a time when a bending point appears on an ORP curve for a previous cycle. In the second aeration tank, the sum of an aeration period and an agitation period is controlled to a predetermined period that is said to be longer than the first predetermined period, as based on the time when an ORP measured value reached a predetermined value in a previous cycle. Operation of the first and second aeration tanks are simultaneously transferred from agitation to aeration based on the detection of the predetermined ORP value.

Tsumura et al. may further be distinguished from applicants' claimed invention in that the aerobic and anaerobic cycles and related timing are controlled in Tsumura et al. via DO and ORP meters and controllers (see, e.g. column 4, lines 27-31) while the cycle control in applicants' invention, as claimed, is based solely on predetermined time periods.

As stated in MPEP § 2131, in order to constitute anticipation under the law, a patent or publication must contain within its four corners a sufficient description to enable the person of ordinary skill to make the invention without undue experimentation. All material elements of a claim must be found in one prior art source, a mere suggestion is not enough and essential elements are not to be read into a reference. If a reference does not expressly recite or disclose applicants' claimed invention, as is the case here, then, it is required under principles of inherency that the claimed subject matter be inevitably produced when the teachings of the relied upon reference are followed, in order for a proper case of anticipation to be found. As such, it is respectfully requested that the grounds for rejection of claims 1 and 22 under 35 U.S.C. 102(b) be removed. Similarly, since

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claims 2-8, and 11-13 incorporate all of the limitations of claim 1 and because claims 23-27 and 30 incorporate all of the limitations of claim 22, it is respectfully requested that the grounds for rejection of these claims under 35 U.S.C. 102(b) also be removed.

The Examiner next rejects claims 9 and 28 under 35 U.S.C. 103(a) as being unpatentable over Tsumura et al., U.S. Patent No. 5,304,308. The Examiner takes the position that Tsumura et al. does not teach the recited  $\text{PO}_4$  levels but that it would have been obvious to a skilled artisan to treat wastewater at the specified  $\text{PO}_4$  levels. Applicants respectfully assert that this rejection is overcome in light of applicants' amendments to claims 1 and 22. Since claims 9 and 28 encompass all of the limitations of claims 1 and 22 respectively and in light of applicants' amendment to claims 1 and 22 and the arguments above, applicants respectfully assert that claims 9 and 28 are not rendered obvious by Tsumura et al. As such, it is respectfully requested that the grounds for rejection of these claims under 35 U.S.C. 103(a) be removed.

The Examiner next rejects claims 10 and 29 under 35 U.S.C. 103(a) as being unpatentable over Tsumura et al., U.S. Patent No. 5,304,308, in view of Hiatt et al., U.S. Patent No. 6,426,004. The Examiner takes the position that Tsumura et al. does not teach the recited pH range but that Hiatt et al. suggests the same.

Hiatt et al. proposes a method and a reactor system for continuous waste water treatment. The method is said to include the steps of flowing an influent into a treatment basin and continuously flowing an effluent out of the treatment basin into a clarifier. It is proposed that the influent be continuously and completely mixed in the treatment basin. In an additional step, oxygen is introduced into the basin for a first predetermined time period. The introduction of oxygen into the basin is then stopped for a second predetermined time period and then the steps of introducing

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and stopping oxygen flow are repeated. The proposed reactor system includes a treatment basin having an inlet for receiving an influent stream, an outlet for continuously discharging an effluent stream and contains a mixed liquor. At least one mixer mixes the mixed liquor. At least one source of oxygen discharges into the mixed liquor and a controller connected to the source of oxygen cycles the source of oxygen on and off. Also proposed is a reactor system for treating waste water that includes a treatment basin having an inlet for receiving an influent stream, an outlet for continuously discharging an effluent stream and containing a mixed liquor; at least one mixer, the mixer mixing the mixed liquor; at least one source of oxygen, the source of oxygen discharging oxygen into the mixed liquor; and a controller connected to the at least one source of oxygen, the controller cycling the source of oxygen on and off.

Applicants respectfully assert that this rejection is overcome in light of applicants' amendments to claims 1 and 22. Since claims 10 and 29 encompass all of the limitations of claims 1 and 22 respectively and in light of applicants' amendment to claims 1 and 22 and the arguments above, applicants respectfully assert that claims 10 and 29 are not rendered obvious by Tsumura et al. in view of Hiatt et al. As such, it is respectfully requested that the grounds for rejection of these claims under 35 U.S.C. 103(a) be removed.

The Examiner next rejects claims 14-21, 28-29 and 31-40 under 35 U.S.C. 103(a) as being unpatentable over Tsumura et al., U.S. Patent No. 5,304,308. The Examiner takes the position that Tsumura et al. does not teach the recited time range but that it would have been obvious to a skilled artisan to have modified Tsumura et al. to include any one of the recited on/off periods. Applicants respectfully assert that this rejection is overcome in light of applicants' amendments to claims 1 and 22. Since claims 14-21, 28-29 and 31-40 encompass all of the limitations of claim 22 and in light of applicants' amendment to claim 22 and the

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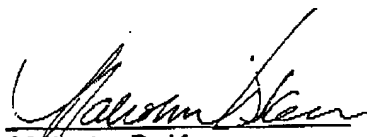
arguments above, applicants respectfully assert that claims 14-21, 28-29 and 31-40 are not rendered obvious by Tsumura et al. As such, it is respectfully requested that the grounds for rejection of these claims under 35 U.S.C. 103(a) be removed.

The references cited by the Examiner as being of interest have been reviewed and found not to be pertinent to the issue of the patentability of the instant claims.

In conclusion, based upon the above, it is respectfully submitted that all claims pending in this application (claims 1-40) are in condition for allowance. Prompt notification of allowance is respectfully solicited.

Respectfully submitted,

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